



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,781	03/25/2004	Fernando Oliveira	EMS-07401	5918

52427 7590 04/02/2007  
MUIRHEAD AND SATURNELLI, LLC  
200 FRIBERG PARKWAY, SUITE 1001  
WESTBOROUGH, MA 01581

EXAMINER
----------

PANNALA, SATHYANARAYAN R

ART UNIT	PAPER NUMBER
----------	--------------

2164

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/808,781

Applicant(s)

OLIVEIRA ET AL.

Examiner

Sathyanarayan Pannala

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 32-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/8/2007.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's Amendment filed on 1/22/2007 has been examined. In this Office Action, claims 1-27 and 32-34 are pending.

#### ***Election/Restrictions***

2. Applicant's election without traverse of Group I, claims 1-27 and 32-34 in the reply filed on 1/22/2007 is acknowledged. Claims 28-31 and 35 are cancelled from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

#### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 1/8/2007 was filed after the mailing date of the first Office Action on 11/17/2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: There is no relation between limitations 1 and 2 of claims 1 and 15. The step connecting limitations 1 and 2 is required.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 15-20 are rejected under 35 U.S.C. 101 the claimed invention is directed to non-statutory subject matter. Claim 15 as a whole constitutes merely a software program that is not recited as being embodied on a medium that a computer may access to realize the functionality of a program. Therefore the claims 15-20 are non-statutory and ineligible for a patent.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 9-11, 14-17, 20-21,26, 32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakatani et al. (US Patent 7,047,355) hereinafter Nakatani.

10. As per independent claims 1, 15, 21 and 32, Nakatani teaches a storage system and to write efficiently write journal logs and execute flush processing (col. 1, lines 62-64). Nakatani teaches the claimed, creating a journal entry that points to a first storage location containing old data to be replaced by the new data, wherein the journal entry is maintained after writing the new data (Fig. 2, col. 6, lines 4-27). Nakatani teaches the claimed, allocating new storage space having a second storage location (Fig. 4, col. 8, lines 24-28). Nakatani teaches the claimed, writing the new data to the new storage space at the second storage location, wherein the old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location (Fig. 4, 6, col. 8, lines 30-34 and col. 9, lines 61-65).

11. As per dependent claims 2, 16, Nakatani teaches the claimed, the storage space is provided by at least one storage device (Fig. 1, col. 2, lines 40-43).

12. As per dependent claims 9, 26, Nakatani teaches the claimed, the storage space corresponds to a disk array storage device (Fig. 1, col. 3, lines 52-55).

13. As per dependent claim 10, Nakatani teaches the claimed, the journal entry is stored in the disk array storage device (Fig. 1, col. 11, lines 59-60).

14. As per dependent claim 11, 17, Nakatani teaches the claimed, the journal entry is stored outside the disk array storage device (Fig. 1, col. 11, lines 59-60).

15. As per dependent claims 14, 20, 34, Nakatani teaches the claimed, each of the journal entries also includes a result of writing the data (Fig. 1 col. 12, lines 23-26).

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 3-8, 12-13, 18-19, 22-25, 27 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani (US Patent 7,047,355) hereinafter Nakatani, and in view of Testardi (US Patent 7,013,379) hereinafter Testardi.

18. As per dependent claims 3, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, allocating new storage space includes remapping a switch coupled to the at least one storage device (Fig.3, col. 7, lines 14-16). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

19. As per dependent claim 4, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, the new data is written by a host coupled to the switch (Fig. 3, col. 7, lines 12-14). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's

method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

20. As per dependent claim 5, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, the switch presents the host with a logical storage area that is created by the switch mapping to different locations of the at least one storage device (Fig. 3, col. 7, lines 8-16). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

21. As per dependent claim 6, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, the mapping is transparent to the host (Fig. 7, col. 10, lines 62-64). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

22. As per dependent claims 7, 27, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, the switch includes at least one processor and



a corresponding memory (components in the switch varies) (Fig. 2, col. 6, lines 44-47). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

23. As per dependent claims 8, 18, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, the journal entry is part of a journal that is stored in the memory (col. 27, lines 23-25). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

24. As per dependent claims 12, 24-25, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, allocating new storage space includes remapping a switch coupled to the disk array storage device and wherein the journal entry is stored on the switch (Fig. 7, col. 11, lines 12-21). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

25. As per dependent claims 13, 19, 22-23, 33, Nakatani does not explicitly teach using a switch. However, Testardi teaches the claimed, each of the journal entries also includes a time stamp (col. 22, lines 7-10). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to combine the teachings of the cited references because Testardi's teachings would have allowed Sakuraba's method to provide a technique that efficiently dispatches a data operation to a data storage device (col. 1, lines 63-55).

### ***Response to Arguments***

26. Applicant's arguments filed on 1/22/2007 have been fully considered but they are not persuasive and details as follows:

- a) Applicant's argument stated as "Nakatani does not disclose a system, as claimed by Applicants..." (see page 13, paragraph one, last 4 lines).

In response to Applicant argument, Examiner disagrees because Nakatani do teach the added limitation (see Fig. 6, col. 9, lines 61-65).

### ***Conclusion***

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sathyanarayan Pannala whose telephone number is (571) 272-4115. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2164

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'S. Pannala', with a long horizontal stroke extending to the right.

Sathyanarayan Pannala  
Primary Examiner

srp  
March 28, 2007